CLAIMS

What is claimed is:

1. A wavefront sensor comprising:

two moiré gratings in an optical path;

means for optically Fourier transforming a moiré deflectogram produced by said gratings;

a variably transmitting optical means following said transform means in said optical path; and

a detector receiving an image through said optical means.

2. The sensor of claim 1 wherein said optical means comprises a transmission filter.

3. The sensor of claim 2 wherein said transmission filter comprises a transmissive optic encoding intensity information upon said moiré deflectogram as a function of fringe angle.

4. The sensor of claim 1 wherein said optical means generates a triangular transmission function.

5. The sensor of claim 4 wherein said optical means generates a triangular transmission function centered on a (0,0) order spatial frequency spot.

6. The sensor of claim 5 wherein said optical means generates a triangular transmission function oriented at 45 degrees to a y-axis.

7. The sensor of claim 4 wherein said optical means generates a triangular transmission function oriented at 45 degrees to a y-axis.

8. The sensor of claim 1 wherein said optical means generates a transmission function centered on a (0,0) order spatial frequency spot.

9. The sensor of claim 8 wherein said optical means generates a transmission function oriented at 45 degrees to a y-axis.

10. The sensor of claim 1 wherein said optical means generates a transmission function oriented at 45 degrees to a y-axis.

11. The sensor of claim 1 wherein said transform means comprises a lens.

12. The sensor of claim 1 wherein said optical means comprises an apodized slit.

13. A Fourier moiré generating apparatus for wavefront sensing, said apparatus comprising:

two moiré gratings in an optical path;

optical Fourier transform means following said gratings in said optical path; and

an apodized optical means following said transform means in said optical path.

14. The apparatus of claim 13 wherein said apodized optical means comprises an apodized slit.

15. The apparatus of claim 13 wherein said apodized optical means encodes intensity information upon said moiré deflectogram as a function of fringe angle.

16. The apparatus of claim 13 wherein said optical Fourier transform means comprises a lens.

17. A method for wavefront sensing, the method comprising the steps of:

employing two moiré gratings in an optical path;

optically Fourier transforming a moiré deflectogram produced by the gratings;

variably transmitting the transformed moiré deflectogram; and

receiving an image of the variably transmitted and transformed moiré deflectogram.

18. The method of claim 17 wherein variably transmitting comprises employing a transmission filter.

19. The method of claim 18 wherein employing a transmission filter comprises employing a transmissive optic encoding intensity information upon the moiré deflectogram as a function of fringe angle.

20. The method of claim 17 wherein variably transmitting comprises employing an optical means generating a triangular transmission function.

21. The method of claim 20 wherein employing an optical means comprises employing an optical means generating a triangular transmission function centered on a (0,0) order spatial frequency spot.

22. The method of claim 21 wherein employing an optical means comprises employing an optical means generating a triangular transmission function oriented at 45 degrees to a y-axis.

23. The method of claim 20 wherein employing an optical means comprises employing an optical means generating a triangular transmission function oriented at 45 degrees to a y-axis.

24. The method of claim 17 wherein employing an optical means comprises employing an optical means generating a transmission function centered on a (0,0) order spatial frequency spot.

25. The method of claim 24 wherein employing an optical means comprises employing an optical means generating a transmission function oriented at 45 degrees to a y-axis.

26. The method of claim 17 wherein employing an optical means comprises employing an optical means generating a transmission function oriented at 45 degrees to a y-axis.

27. The method of claim 17 wherein optically Fourier transforming comprises employing a lens.

28. The method of claim 17 wherein variably transmitting comprises employing an apodized slit.

29. A Fourier moiré generating method for wavefront sensing, the method comprising the steps of:

employing two moiré gratings in an optical path;

employing an optical Fourier transform means following the gratings in the optical path; and

employing an apodized optical means following the transform means in the optical path.

30. The method of claim 29 wherein employing an apodized optical means comprises employing an apodized slit.

31. The method of claim 29 wherein employing an apodized optical means comprises employing apodized optical means encoding intensity information upon the moiré deflectogram as a function of fringe angle.

32. The method of claim 29 wherein employing an optical Fourier transform means comprises employing a lens.